Engelmann, George Julius.

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THE CAUSE OF RACE DECLINE IS NOT EDUCATION.

With the Compliments of the Author.

By

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EDUCATION NOT THE CAUSE OF RACE DECLINE.

By GEORGE J. ENGELMANN, M.D.,
BOSTON.

YALE graduate families have been growing steadily smaller, says Mr. Clarence Deming in an interesting review (*Yale Alumni Weekly,* March 4, 1903) based upon class returns which show a gradually decreasing fecundity from 1810 to 1880: this statement together with the small size of the Harvard family as revealed by the report of President Eliot, has justly directed attention to the apparently sad family condition prevalent among college graduates, or, as it has been expressed, among 'the highly educated portion of our population'; and it is generally assumed that this small family size pertains mainly to the highly educated, that conditions are better among the—let us say—*less* highly educated. It has been inferred that college graduates' families stand alone in not reproducing themselves and 'not adding to the increase of the population,' and that other portions of the population do so reproduce and add to the increase. Accepting this, it naturally follows that education, which has caused the mischief, must be suitably regulated. One suggestion is to shorten the term of study. *But are the premises correct?*

Speculation has been rife, and the small size of the graduate family is discussed far and wide without ever a thought as to what the conditions among the great mass of our native population may be, and yet it would be well to establish the facts in the case, and to determine the existence of an exceptionally low fecundity among college graduate families before deciding on cause and cure.

True, the average graduate family does not reproduce itself, but no more does that of any other group of our native American population, and the surviving family, the net family of the college graduate is not smaller, but actually larger than that of his less highly educated brother. This points to an unusually low rate of reproduction for the entire native-born element of our population; in fact the conditions now existing among the American people are worse than those found in any other country. They are those of a decadent race, those of Greece and Rome in the period of decline; and again and again, within the past few years, have I urged that the attention of thinking men be seriously given to a consideration of the alarming status attained.

To present this properly, and demonstrate the part taken by each group in the movements of population, it is essential to consider *class reproduction;* not alone fecundity and size of family, but marriage rate as well must be taken into account. In both the status of the college graduate as a class is most creditable, and at variance with all that has been assumed, though conditions differ greatly in individual institutions.

The marriage rate is surprisingly high for the highly educated, or, to be precise, for 4,408 college graduates, even if the 88.7 per cent. of Brown '72 and the 87 per cent. of the Bowdoin classes of 1875 and '77 is above the average, which is 79.4 per cent. for 16 Yale, Brown, Bowdoin and Princeton classes, and 75.4 per cent. if we include the 9 Harvard classes '72–'80 with their low marriage rate of 71.09 per cent.

My investigations show that the college graduate, the academic graduate (conditions differ for scientific graduates), marries 7–7½ years after leaving college, at nearly 30 years; we must compare the alumnus 25 years out, up to 47½ years of age, with the age group 40–49 of the native American male, with a marriage rate of 79.02 per cent., slightly below the college average.

TABLE I.

MARRIAGE RATE. 30 CLASSES, 4,408 GRADUATES.*

Group 40—49 years of age, approximately.

3,015 College Graduates, 22.5–47 years of age.					Population at large.	
27 Classes from 5 Colleges.	No. of Years out of College.	Number of Classes.	Year of Graduating.	Per Cent. Married.	Per Cent. Married.	Male population of Massachusetts, 40–49 Years of Age.
Brown	25	1	72	88.7%		
Bowdoin	25	2	'75 and '77	86.9		
Yale	25	1	73	82.3		
Yale	25	1	69	81.3	79.02	Native born.
Princeton	25	1	76	80.4	82.46	Foreign born.
Yale	25	10	'60–'79	78.4		
Harvard { 25 years	71.06	9	'72–'80	71.09		
Harvard { 20–23	71.1					
545 College Graduates, 10–11 years out of College.						30–39 years.
Harvard	10	1	79	54.2	68.8	Native born.
"	11	1	86	51.9	74.5	Foreign born.
Princeton	10	1	91	75.4		

Group 20—29 years of age, approximately.

848 Graduates 7½ Years out of College, 22.5–30 Years of Age.				Male Population of Massachusetts, 20–29 Years of Age.	
Princeton 7½	1	'95	43%	27.7%	Native born.
Harvard 7½	1	'95	26%	36.2%	Foreign born.

* This table is arranged according to rate of marriage.

Accepting 22.5 as the age of graduating,* graduates of 1895, 7½ years out of college would have attained the age of 30 and must have married between the ages of 22.5 and 30, so that they are comparable to native males of the age group of 20 to 29, with a marriage rate of 27.7 per cent. The Harvard class of '95 shows a somewhat lower rate, 26 per cent., but the Princeton class of the same year a very much higher one—43 per cent. The Princeton class of 1891, ten years only out of college, has 75.4 per cent. of its members married, more than any Harvard class as far back as '60 and probably farther shows after its twenty-fifth anniversary.

These figures, though small and bearing on only a few of the many colleges, certainly indicate that the male college graduate in this country is not more given to solitary life than the native male of all classes throughout the state and that the supposition of Rubin and Westergaard for Denmark, that the marriage frequency of the professional class is only two thirds that of the average does not hold good for the American alumnus, and probably not for the professional classes of the United States. It shows that a larger per cent. of college graduates marry, and those of some colleges marry in such numbers that it would *appear* that they marry as early as does the average native male, because the percentage in the earlier years is the same for average males and graduates.

The marriage rate of Harvard graduates alone differs from that recorded for all alumni investigated, from Princeton, Yale, Brown and Bowdoin, so that the alumnus of this institution can not well serve as an exponent of the highly educated part of our population, or even of the average college graduate, differing distinctly from this group and less than that of the native male of the same age throughout Massachusetts with a marriage rate of 79 per cent. (I recall that for purpose of comparison with the 25 year graduates, I have taken the age group 40 to 49 of the native population, which presents the very nearly highest marriage rate, 79.02 per cent.)†

* 22.5 years is the average age of graduating for the Princeton classes 1901–02, 22.6 for Yale classes 1882–92, 22.8 for Yale 1892–02; for a crude average 22.5 will answer. For Harvard the age of entering is 19 with a probable 22.9 for graduating, an approximation necessitated by the non-existence of authoritative data.

† My figures are based on a study of 4,408 alumni from leading eastern colleges: 848 graduates 7½ years out of college, 545 10 and 11 years out and 3,015 25 years out, and I have been careful to record rates for all older classes, *i. e.*, graduated more than 25 years ago, as given at the time of the twenty-fifth anniversary, for purposes of comparison on a just basis. This explains some trifling discrepancies which may be observed between my figures and others recently published. To me it seemed the only correct procedure. The Harvard classes '78, '79 and '80 are reported on a 23, 21 and 20 years' basis respectively, making but a slight difference, as may be seen by a study of Princeton '91, 10 years out of college.

The fecundity of graduate marriages, the total number of children born (*gross* fertility) is a trifle less than that of the average native marriage, rarely above, as in the Princeton class of '76, with 3.2 children: it is 2.55 for the Yale classes 1860–80, 2.4 for Brown '72, 2.07 for Harvard 1872–80, 2 for Bowdoin 1875 and '77 as compared to 2.7 for the native American family of Massachusetts according to the refined statistics of Kuczynski, which show a greater fecundity for the native population than is proved by my studies in St. Louis and those of Dr. Chadwick in Boston, 2.1 and 1.8 respectively.* Even granted so high a fecundity as 2.7 for the average native family, the *surviving* children under this assumption are only 1.9 to the family; the lower death rate for children of the cultured and well-to-do—10 per cent. in college graduate families against 28.5 per cent. for the lower classes—reverses the relative status when we consider the actual family size; the number of surviving children, the *net* fertility: this is *greater* for the graduate family (see Table II.); and it is the surviving children who serve to reproduce the population. 1.9 (1.92 precisely) is the largest possible number for the native population of Massachusetts, as compared to 2.7 for Princeton, 2.28 for Yale, 2.26 for Brown, 1.86 for Harvard 1872–80, 1.88 for Bowdoin.

TABLE II.†

DEATH RATE IN FAMILIES OF PROFESSIONAL AND LABORING CLASSES.

Parentage.	Number of Children to each Married Couple.		Death.		
	All Born.	Surviving.	Number Died.	Death Rate Per Cent.	
3015 College Graduates	*2.34*	*2.1*	**0.24**	**10 %**	United States.
Population of Mass. Native Born.	*2.69*	*1.92*	**0.77**	**28.6**	United States.
Population of Mass. Foreign Born.	*4.53*	*3.01*	**1.52**	**33.5**	United States.
Denmark. Upper Class	*4.52*	*3.31*	**1.21**	**26.7**	
Denmark. Artisan and Laboring Class	*4.95*	*3.14*	**1.81**	**36.6**	
Berlin. Military or Upper Class				**12.84**	Europe.
Berlin. All Children				**24.72**	Europe.

* My own data are obtained direct from the mother and will more correctly represent existing conditions than figures like those of Kuczynski secured by additions for possible omissions to state registration records. I must add that they show, on an average, the number of children borne in 10 years of marriage, which should be very near the total.

† This table does not quite indicate what I wish to show, as the mortality rate compared with that of the graduate family is not the mortality in families of the lower and laboring classes, but in those of the entire population, which includes the educated and professional classes.

Graduate families are, as these figures show, not only *not* smaller, but they are *larger* than those of the native-born American population of all classes, and larger than would have been expected from what is known of the relative fecundity of rich and poor in other countries. The relation of the educated and professional classes to the masses, to the laboring or artisan class, however, is the same as that shown for Copenhagen by Rubin and Westergaard, the total number of offspring born being somewhat larger for the family of the artisan; the real family, the number of the *surviving,* on the contrary, being somewhat *larger* for the *educated,* for the reason of the lower death rate in such families.

The rate of child-birth has been decreasing in college families, but it has been decreasing throughout the civilized world, slowly in the old world, with astonishing rapidity in the new, that is, among the native American-born of our population, until it has reached a minimum; the number of children to the native American family of all classes (and *in this lies the danger*) being less than it is in any other country, France even not excepted, which has long been known to be at the point of stagnation.

These are facts; the figures have all been elaborated and repeatedly presented so that any hypothesis is unnecessary. The American population is not holding its own; it is not reproducing itself, and the highly educated do not stand alone in this.

Important as is the fact of our racial decline, bearing as it does upon our future as a nation, it has not been observed, because of the fair general rate of child-birth, due to the much greater fecundity of the foreign element, which is from 2 to 2½ times that of the native, thus bringing the total birth rate of the state to an equality with that of France,—22.4 per 1,000 living population, or above it.

This is true of six representative states, for which we have fairly reliable statistics; in some, the birth rate is distinctly higher than that of France, as high as 26 and 28 per 1,000, but even in such states, that of the native-born is far below that of France. So in Massachusetts, with a total birth rate for the state of 27.78, practically 28 per 1,000 living population, that of the native-born is only 17, whilst that of the foreigner is over 52 per 1,000.

The *gross* fertility, the total number of children born is 2.1 in France, and for the native population of the above state it is said to be 2.69 for 3,015 graduates from 25 classes 1870–80, in five eastern colleges it is 2.34. But these figures may be ignored, as it is not the total number of children born, but the *surviving* who add to the population, and it is these whom we consider: the *surviving* children of college graduates, 2.7 for Princeton, 2.28 for Yale, 1.86 and 1.88

for Harvard and Bowdoin, respectively, must be compared with the number of surviving children for the native American population of the state of Massachusetts, which is 1.9, less, according to my own observations.

Less than 2 surviving offspring—1.9—to reproduce the race for all native-American marriages, 2.1 for those of the limited group of college graduates!

This indicates a remarkable change since the days of Benjamin Franklin, who tells us that 'one and all considered each married couple in this country produced 8* children.' Though this is not a conclusion drawn from statistical study, it is yet indicative, and in harmony with my own deduction from genealogical records. Whatever the precise figures be, all observations agree as to the high fecundity of the American colonies, and tell of the great change which has taken place in one short century.

From conditions better than those in any other country, five and more children to the family, such as led to the Malthusian theory of superfecundation and to the fear of over population of the earth's surface, we have passed in hardly one hundred years to our present condition, with a fecundity for the native-born below that of any other country, such that the American race is unable to reproduce itself with a birth rate of 17 per 1,000 population,† hardly 2 children to the family!

These facts I first presented in 1901,‡ with records up to the end

* Let no one discredit this and call it impossible! Though surprising to us with a knowledge of the present, these figures are even exceeded at this day by the French-Canadian with a fecundity of 9.2 children to the family, as I gather from a study of one thousand families found in the records of Quebec life insurance companies: 9.3 for the rural, 9.0 for the urban population, is the fecundity of the child-bearing woman, not the fecundity per marriage, but nearly so, as sterile marriages are rare. The birth rate of the Russian peasantry in the Kaluga district, near Moscow, is 7.2 children to the marriage. Throughout Norway it is 5.8 at the present time, as much as it was in the American colonies at the time of the Declaration of Independence.

† That the native population is dying out, and that at an alarming pace, is evident, not alone from a birth rate much lower than that of France, but also from a comparison with that of Berlin. In France the birth rate was 22.5 per 1,000 living population; that of the native population of Massachusetts is 17 per 1,000; in Berlin, 1891–95, with *10 births for every 100 women of child-bearing age*, the births were one ninth behind the number necessary to keep the population stationary, whilst in Massachusetts the birth rate is *much lower, 6.3 births for 100 adult American born women of child-bearing age.* The result is self-evident.

‡ The subject has been treated in the following papers by the writer: 'The Increasing Sterility of American Women, with Increase of Miscarriage and Divorce, Decrease of Fecundity.' Engelmann, *Jour. of the Amer. Med. Assoc.*, October 5, 1901. 'Decreasing Fecundity Concomitant with the Progress of Obstetrics and Gynecology.' Engelmann, *Philadelphia Med. Jour.*, January 18, 1902. 'Birth and Death Rate as influenced by Obstetric and Gynecic Practice.' Engelmann, *Boston Med. and Surg. Jour.*, May 15, 1902.

of the eighteenth century, when the decline began, and at the same time I published complete statistical data for the end of the nineteenth century, when the lowest level had been reached.

I have shown that a gradual decline had already taken place during the colonial period from 6 and more children in the seventeenth century to 4.5 at the end of the eighteenth; then 2 at the close of the nineteenth; data for the intervening period I had none. It seemed reasonable to conjecture a gradual decline with developing civilization and rapidly increasing luxury of life, but proofs were wanting.

The Yale records fill the gap, and supply the intervening data I had so far persistently but vainly searched for; they distinctly portray the gradual decrease in the rate of child-birth and enable me to complete the table, period by period, which shows the remarkable changes that have taken place in family life in this country. To this the highly educated portion of our population is no exception. The decline is general, not confined to any one element, it is the same for college graduate and laboring class, for all American-born, for highly educated and less highly educated, so that higher education can not be the causative factor.

This table presents a startling record for a young and vigorous community, and it is but natural that we should ask for the cause of this rapid decline in birth rate among all classes of the American-born: where are we to seek the explanation? It can not be in physical inability, though the ravages of venereal disease are leaving their traces more clearly with increasing civilization and centralization, and constantly add to the number of the sterile. (This is 2.5 per cent. among a simple, hard-working people in the interior of Russia (Kaluga), and in Norway, whilst 20 and 25 per cent. of marriages are barren in the civilized and infected communities of the United States and of France.) I find 25 and 30 per cent. of families barren among the married graduates of large and centrally located colleges, as low as 9 per cent. in a Princeton class with high marriage rate and large families, an exceptionally healthy condition when we remember that 20 per cent. of all native marriages in the entire state of Massachusetts are childless.

The cause for this decline in family size can not be sought in the increased age for marriage, as this is delayed for all educated and professional men in this country as in England by nearly three years, from 27.2, the average age of *first* marriage for the native groom in

* This steady decrease in the number of offspring in college graduate families is admirably shown by Professor Thorndike in his article on 'Decrease in Size of American Families' (POP. SCIENCE MONTHLY, May, 1903). Unfortunately he does not give either marriage rate or the number of surviving children and pictures only graduate families.

Table III.

Race Decline. Decrease in Size of the American Family.

Period of Observation.	Locality or Group.	No. of Cases.	Number of Children to Each Married Couple.	
			All Born.	Surviving.
Am. Colonies	Benjamin Franklin.		8	
1700–1750	Genealogical Records.	503	6.6	
1750–1800	" "	784	6.1	
"	Am. Colonies (Sadler).		5.2	
"	New York State.		5.2	
1726–1779	Hingham (Town Rec.).	521	4.3	
1727–1784	Salem " "		4.6	
1783	Hingham (Holyoke).		4.6	
1800–1830	Genealogical Records.	213	4.6	
1804–1811	Portsmouth.		4.3	
1810–1842	Yale Grad. Class Rec.	447	4.13	
1842–1860	" " " "	839	3.33	
1861	Bowdoin " "	45	2.62	*2.35*
1860–1879	Yale Grad. " "	1104	2.55	*2.28*
1872	Brown " " "	53	2.45	*2.26*
1876	Princeton Gr. " "	118	3.2	*2.7*
1872–1877	Harvard " " "	888	2.21	*1.97*
1877–1880	" " " "	513	1.87	*1.66*
1885	State of { native-born.		2.69	*1.92*
	Mass. { foreign-born.		4.5	*3.01*
1870–1880	Boston Labor Class, Chadwick.*	1374	1.9	
1870–1890	St. Louis Labor Class, Engelm.*	804	2.1	
"	St. Louis Higher Class, Engelm.*	114	1.8	
1900	Boston Upper Class, Engelm.*	600		*1.8*
1885	Female Col. Grad., Wright.*	804	1.3	
1900	Female Col. Grad., Smith.*	343	1.8	*1.6*
	Female Col. Grad., England.	58	1.5	

From table of Prof. E. L. Thorndike *excluding families where husband died in first 10 years of married life*—for Middlebury and N. Y. Univ., for Wesleyan all married are taken.

All Children Born.

	Middlebury.	Wesleyan.	New York University.
1803–09	5.6		
1810–19	4.8		
1820–29	4.1		
1830–39	3.9	4.5	4.0
1840–49	3.4	3.3	3.2
1850–59	2.9	2.2	2.9
1860–69	2.8	2.6	2.5
1870–74	2.3		
1875–79	1.8		

Massachusetts, to 30 for the male, and for the educated female from 24.3, the average age of first marriage for the bride, to 26.4, but as the number of surviving offspring is not less, this delayed marriage can not be looked upon as a factor in determining the small size of the graduate family. The cause is not to be sought in education, in so far as the male is concerned. The educated female is in a different class; the fecundity of the female college graduate in this country is lower than that of any other native group, and this low birth rate holds good for her English sister as well, the very small size of her family—smaller than that of the American alumna—standing out in striking contrast with the much higher fecundity of the English people, which is nearly double that of the native-born of the United States.

* Average 10 years of married life.

Family shrinkage seems clearly referable to the strenuous, nerve-racking life of the day, to the struggle, not for existence, but for a luxurious existence, to the ever-increasing desire for the luxuries of life and the morbid craving for social dissipation and advancement. It is due, as plainly expressed and openly advocated by many, to the desire to have no children or only such a number as husband and wife believe in their wisdom suitable and adapted to their ideals of comfort, and to their supposed financial possibilities; the most important factor is the "deliberate and voluntary avoidance, the prevention of child-bearing on the part of a steadily increasing number of married couples,* who not only prefer to have but few children, but who 'know how to obtain their wish' " (Dr. John S. Billings). Professional observation and the plainly expressed ideas of men and women who do not hesitate to make known their views substantiate the above, as does the startling decrease of fecundity and the corresponding increase in sterility in the face of the scientific progress of the day in all that pertains to the physical well-being and health of woman. This decrease of fecundity in the face of advance in obstetrical and gynecological science, which should lead to a healthier condition of the child-bearing organs—a decrease confined to one element of the community, the native American—clearly proves the condition to be one determined by the volition of that element. Families are small among all classes of the native-born, large among all classes of the foreign-born population, showing that the cause of this low fecundity is not universal but it is one confined to the native element only; this limiting of the small family to the native of all classes in itself would prove that education is not that cause, were such proof not made needless by the fact that the family of the educated man is actually larger than that of the native male throughout the state.

Let us no longer beat about the bush and attribute the low fecundity now prevailing to later marriages and higher education. This explanation has been accepted because it is a tradition and universally credited; it is not so in other countries, and it has never been proved to be so for the United States. Theoretically later marriage must, it

* I have used the word *couples* intentionally, though in the original it is *women;* Dr. Billings says that the cause of declining fecundity is in the 'voluntary prevention of child-bearing on the part of a steadily increasing number of married women,' indicating that the *wife* is mainly at fault, whilst in truth *it is the husband* to an equal and *even a greater extent,* according to my observation.

In defense of the American woman it is but right to call attention to this fact and to correct the false impressions which are prevalent. This assertion is substantiated by experience and by the carefully prepared Michigan registration reports.

would seem, lead to the lowering of the birth rate. Facts plainly disprove this, and why should higher education lessen the size of the family as all seem to assume? Because the years of marriage are less? This is a hasty assumption as will appear when we recall that all children are born on an average within 7½ years after marriage, some authorities even say within 5 years. Accepting the longer term of 7½ years, this leaves the alumnus who marries 7 years after graduating in his thirtieth year, at 37½, and his wife, who marries at the latest at 26.4, in her thirty-fourth year. The end of the average child-bearing period falls accordingly, for both the late marrying graduate and his spouse, still in the most vigorous period of life, 37½ for the educated male, 34 for the female, not so late as to interfere in any way with the family prospects and demonstrating that family increase is not necessarily limited by this delay of marriage by a few years. This is true for the college graduate; for the entire highly educated portion of our population I have no data and make no assertions. No figures are available for a group such as this, and this must be noted as the family size of this class has of late been considered. It is too comprehensive a term, and has been somewhat indiscriminately used in recent discussions of race decline; even far-reaching conclusions bearing upon this large group of the highly educated have been based upon data derived from the graduates of a single institution. Not even from those of several institutions if under similar conditions or even if of the same sex are we warranted in judging of the entire highly educated part of our population. The female college graduate must be classed among the highly educated, and the number of children in her family is below that of the native population; it is lower than that of any other group, whilst that of the average male graduate family is higher. Then again the college alumnus can not without further investigation be accepted as a standard, for even the highly educated male, as appears from the facts presented by Professor Dexter in his recent study of 'High Grade Men: in College and Out.' He shows that hardly more than one third, 37 per cent. of the 8,602 supposedly successful and prominent Americans mentioned in 'Who's Who' are college graduates, and only 2.2 per cent. of all now living alumni are included among these 8,000 supposedly higher type and most representative of living Americans. Regardless of this the variation in marriage and birth rate of the different elements of this group of the highly educated make it impracticable to consider them jointly.

These facts, together with the limited data on hand, make it impossible as yet to reach conclusions of any kind as to the part taken by the highly educated portion of our population as a class in race

reproduction; it is the male college graduate whom we here consider and compare, not with the male of the entire population, but with the native-born American only. I emphasize this as the two groups, the native- and foreign-born of our citizens differ widely as to the part they play in reproduction of race. If the term highly educated is here used it refers solely to the college graduate.

A high marriage rate and an average of 2.1 surviving children to the graduate family as compared to 1.9 for the native-born male throughout the state tells us plainly that, contrary to all theory and supposition, higher education does not mean diminished reproduction. It is the American nationality that stands for lessened marriage and low birth rate, in striking contrast to the foreign-born of our citizens with families of from 3 to 5 children, 4.5 in Massachusetts with 3 surviving, and this is true for all classes of foreign-born.

Graduates as a group make an exceptionally good showing, and college alumni are to be congratulated upon the standard maintained; the net fecundity is greater, family size is larger than that of the general native population and marriage rate of some groups is higher, so that reproduction is more nearly approximated by the college graduate family, contrary to European statistics for professional men, who, as already stated, are assumed to have a marriage rate two thirds less than the average male of the population. Class reproduction for college graduates is higher than it is for the population at large.

The average marriage rate for 1,614 graduates of the classes 1870–79 from Yale, Princeton, Brown and Bowdoin is 79.4 per cent. and for a corresponding group of Harvard graduates, 1,401 of the classes 1872–80, it is 71.09 per cent., a rate so much lower than that for graduates at the other institutions named that we must differentiate. The average of these 3,015 alumni of both groups is 75.7 per cent.

The marriage rate of Harvard graduates varies so much from that of the alumni of all other institutions so far investigated that the Cambridge graduate can evidently not serve in this respect as an index for family conditions among college men any more than he can be looked upon as representative of that other element of the highly educated portion of our population, the female college graduate with a marriage rate of from 30 per cent. to 50 per cent. or, for still another, the highly educated man who has never received an academic degree and this, as has recently been shown, is a surprisingly large number in this country; a fact deserving of note since the conjugal status of the 'highly educated' has been treated on the basis of that of the Harvard graduate by President Eliot in his recent much quoted report and coming from so eminent an authority the statements made have been widely disseminated and generally accepted. The general

marriage average of 79.4 per cent. for a group of graduates from four colleges and 71.09 per cent. for Harvard alumni must be compared with 79.02 per cent. for the native male population of the age group 40–49 years, and is greatly to the credit of college men. By reason of this high marriage rate the number of surviving children for 100 graduate members of a group or class, married and unmarried, is larger than it is for the less highly educated and in fact larger than it is for all other elements of our native male population, even where the number of children to the married couple is the same; to this the Harvard graduate is an exception; with both family size and marriage rate lower than the graduate average and lower than that of the native-born male of Massachusetts (of a comparable age group—40–49 years), reproduction per class is naturally less. A Princeton class, if we may take '76 as an example, more than reproduces itself: it reproduces not alone the married couple, 2.7 surviving children to each, but *more than reproduces the entire class,* 2.3 to each class member, married and unmarried (2.3-net class reproduction). Brown just reproduces itself with 2.26 living children to the married graduates and precisely 2 to each member of the class.

TABLE IV.

REPRODUCTION OF CLASS AND RACE.

Number of Classes.	College.	Year of Graduating.	Number in Class.	Per Cent. Married.	Number of Surviving Children.		
					To Each Married Graduate.	To Each Member of Class Married and Single.	To Class of 200.
1	Princeton ...	'76	118	80.4	2.7	**2.3**	**460**
1	Brown	'72	53	88.7	2.26	**2.—**	**400**
10	Yale.....	'60–'79	1,105	78.4	2.28	**1.79**	**358**
1	Yale.....	'69	118	81.3	2.05	**1.66**	**332**
1	Yale.....	'73	113	82.3	1.98	**1.57**	**314**
2	Bowdoin.....	'75 and '77	107	86.9	1.88	**1.56**	**312**
9	Harvard	'72–'80	1,401	71.09	1.86	**1.32**	**264**
25		'70–'80	3,015	75.7	2.1	**1.58**	**316**
	Yale, Princeton, Brown and Bowdoin Compared with Harvard.						
16	Y. P. Br. Bo.	'60–'80	1,614	79.4	2.28	**1.81**	**362**
9	Harvard*.....	'72–'80	1,401	71.09	1.86	**1.32**	**264**

This table is arranged according to rate of reproduction.

All classes later than 1870 of other institutions so far considered fail to reproduce themselves, most so Harvard alumni. Yale graduates very nearly reproduce themselves with 2.28 surviving children to the

* The 6 Harvard classes 25 years out '72–'77 (inclusive) with a marriage rate of 71.06 have a class reproduction of 1.4 or 280 for a group of 200.

married graduate and a net class reproduction of 1.78 (*i. e.,* for each member of the class). Next comes the single Yale class of '73 with a class reproduction of 1.57 children. The two Bowdoin classes 1875 and '77 are represented by 1.5 and the 9 Harvard classes 1872–80 by 1.3 children for each graduate, married and unmarried (1872–77 by 1.4 and 1878–80 by 1.17 respectively).

A great decrease has indeed taken place in the birth rate of graduate families, but not quite to the same extent as among other groups of the same social grade: the wealthy or leisure class, the well-to-do invariably do less towards reproducing themselves than does the population at large; the college graduate, the highly educated male, does more.

In view of the data here presented the *college graduate does more towards reproducing the population than does the native American of other classes*—this is true even of Bowdoin alumni but not of those of Harvard with a lower marriage rate.

I am well aware that this statement must cause surprise. It is contrary to all tradition, but in harmony with the conditions known to exist in all countries of the old world where recent statistical study has enabled us to make such comparisons. It proclaims that higher education is no cause of race decline, but that on the contrary, if not a safeguard against the continued decrease of fertility, it is the sheet anchor to which we must look for the race's preservation. College graduates' families produce the largest number of surviving children: it is among the wealthy that family size is smaller than it is among the average native population, and this proves a fecundity relatively still lower as almost all that are born survive, few die, child mortality in this group is far below that of the general population as the offspring is surrounded by the most favorable sanitary and hygienic conditions attainable.

Résumé.—The data now available indicate that the highly educated male element does more towards reproducing itself than any other large group of our native population. The marriage rate is the same, and the number of surviving children to the family is greater than it is for the native population at large, so that we can no longer accuse the college graduate or, if I may say, 'the highly educated male portion of our population,' of having an exceptionally small family, and of doing *less* than other groups towards reproducing the population; nor must we lay the blame for the low fecundity of the native American family on higher education. *Shortening the term of college study will effect no change.* Wealth, luxury and social ambition are cause of the diminishing size of the family and of race

decline. The factors are the same which have been active in earlier civilizations as they are to-day: increasing wealth and the introduction of foreign manners are pointed out as causing in ancient Rome the lessening fertility among the better classes which preceded political disruption. Cause and effect were the same and even the methods employed to thwart the tendencies of nature were the same: "Few children are born in the gilded bed, to the wealthy dame, so many artifices has she, and so many drugs, to render women sterile and destroy life within the womb" (Juvenal Sat. VI., ll. 594).

The assumption of a false social position, the struggle for the attainment of luxury even more than its possession, leads to the limitation of the family, by 'the increased amount of restraint exercised,' as one author delicately expresses it, but to speak without circumlocution, by often ruinous measures for the *prevention of conception,* and by *criminal means for the destruction of the product of such conception* if it does accidentally occur. Such, in plain words, are the *causes* which lead to the *small size of the American family of all classes.*

To all who have aided me in this research:

I take great pleasure in expressing my keen appreciation of the interest shown by those to whom I have applied for the data necessary to this study and I hereby tender my sincere thanks for figures furnished and for documents generously placed at my disposal by the officers of Yale and Princeton Universities, by the Class Secretaries of the classes quoted of Yale, Princeton, Harvard and Bowdoin as well as to the graduates of these institutions who have kindly aided me in my search for facts. G. J. E.

Errors in the magazine article.

In this reprint I have corrected some few slight errors, especially as to marriage rate, which have appeared in the magazine article, some by reason of delay in proof, others, not discovered until the journal had been issued, due to my acceptance without verification of one of the figures published in the last presidential report to the Harvard Overseers; these I have now corrected from original sources, from which all data here given are taken.

As my figures for marriage rate among the population differ considerably from others recently published I here call attention to the fact that I have been considering only the American born part of our population and *first* marriages, of both college graduate and native male, whilst mostly this point is overlooked and second and third marriages are included. The difference is marked; the largest number of married native born males is in the age group 50 to 60 years, 80.89 per cent. and as cited by a recent writer on the subject it is made to appear as high as 93 per cent., but this is for *first and plural* marriages, among the *whole population, native and foreign,* in the age group 60 to 70 years; for the group 50 to 60 it is given by them as 92 per cent. in place of 80.89 per cent. as given by me.

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